

3rd Grade – 2017-2018: Rotation A

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| 1st Quarter | <p style="text-align: center;">WEATHER & CLIMATE</p> <p>13: Display data graphically and in tables to describe typical weather conditions expected during a particular season (e.g., average temperature, precipitation, wind direction).</p> <p>14: Collect information from a variety of sources to describe climates in different regions of the world.</p> <p>15: Evaluate a design solution (e.g., flood barriers, wind resistant roofs, lightning rods) that reduces the impact of a weather-related hazard.*</p> |
| All of 2nd Quarter & Part of 3rd Quarter (October 9 – January 19) | <p style="text-align: center;">HEREDITY & DIVERSITY</p> <p>5: Obtain and combine information to describe that organisms are classified as living things, rather than nonliving things, based on their ability to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p> <p>6: Create representations to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, butterflies), including commonalities such as birth, growth, reproduction, and death.</p> <p>7: Examine data to provide evidence that plants and animals, excluding humans, have traits inherited from parents and that variations of these traits exist in groups of similar organisms (e.g., flower colors in pea plants, fur color and pattern in animal offspring).</p> <p>8: Engage in argument from evidence to justify that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient water, change in an arctic fox's fur color due to light and/or temperature, stunted growth of a normally large animal due to malnourishment).</p> <p>9: Analyze and interpret data from fossils (e.g., type, size, distribution) to provide evidence of organisms and the environments in which they lived long ago (e.g., marine fossils on dry land, tropical plant fossils in arctic areas, fossils of extinct organisms in any environment).</p> <p>10: Investigate how variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (e.g., plants having larger thorns being less likely to be eaten by predators, animals having better camouflage coloration being more likely to survive and bear offspring).</p> <p>11: Construct an argument from evidence to explain the likelihood of an organism's ability to survive when compared to the resources in a certain habitat (e.g., freshwater organisms survive well, less well, or not at all in saltwater; desert organisms survive well, less well, or not at all in woodlands).</p> <ul style="list-style-type: none">a. Construct explanations that forming groups helps some organisms survive.b. Create models that illustrate how organisms and their habitats make up a system in which the parts depend on each other.c. Categorize resources in various habitats as basic materials (e.g., sunlight, air, freshwater, soil), produced materials (e.g., food, fuel, shelter), or as nonmaterial (e.g., safety, instinct, nature-learned behaviors). <p>12: Evaluate engineered solutions to a problem created by environmental changes and any resulting impacts on the types and density of plant and animal populations</p> |

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| | <p>living in the environment (e.g., replanting of sea oats in coastal areas due to destruction by hurricanes, creating property development restrictions in vacation areas to reduce displacement and loss of native animal populations).*</p> |
| <p>Part of 3rd Quarter & All of 4th Quarter (January 22 – March 16)</p> | <p style="text-align: center;">FORCES & INTERACTIONS</p> <p>1: Plan and carry out an experiment to determine the effects of balanced and unbalanced forces on the motion of an object using one variable at a time, including number, size, direction, speed, position, friction, or air resistance (e.g., balanced forces pushing from both sides on an object, such as a box, producing no motion; unbalanced force on one side of an object, such as a ball, producing motion), and communicate these findings graphically.</p> <p>2: Investigate, measure, and communicate in a graphical format how an observed pattern of motion (e.g., a child swinging in a swing, a ball rolling back and forth in a bowl, two children teetering on a see-saw, a model vehicle rolling down a ramp of varying heights, a pendulum swinging) can be used to predict the future motion of an object.</p> <p>3: Explore objects that can be manipulated in order to determine cause-and-effect relationships (e.g., distance between objects affecting strength of a force, orientation of magnets affecting direction of a magnetic force) of electric interactions between two objects not in contact with one another (e.g., force on hair from an electrically charged balloon, electrical forces between a charged rod and pieces of paper) or magnetic interactions between two objects not in contact with one another (e.g., force between two permanent magnets or between an electromagnet and steel paperclips, force exerted by one magnet versus the force exerted by two magnets).</p> <p>4: Apply scientific ideas about magnets to solve a problem through an engineering design project (e.g., constructing a latch to keep a door shut, creating a device to keep two moving objects from touching each other such as a maglev system).*</p> |

3rd Grade – 2017-2018: Rotation B

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| <p>All of 1st Quarter & Part of 2nd Quarter (October 9 – November 17)</p> | <p style="text-align: center;">FORCES & INTERACTIONS</p> <p>1: Plan and carry out an experiment to determine the effects of balanced and unbalanced forces on the motion of an object using one variable at a time, including number, size, direction, speed, position, friction, or air resistance (e.g., balanced forces pushing from both sides on an object, such as a box, producing no motion; unbalanced force on one side of an object, such as a ball, producing motion), and communicate these findings graphically.</p> <p>2: Investigate, measure, and communicate in a graphical format how an observed pattern of motion (e.g., a child swinging in a swing, a ball rolling back and forth in a bowl, two children teetering on a see-saw, a model vehicle rolling down a ramp of varying heights, a pendulum swinging) can be used to predict the future motion of an object.</p> <p>3: Explore objects that can be manipulated in order to determine cause-and-effect relationships (e.g., distance between objects affecting strength of a force, orientation of magnets affecting direction of a magnetic force) of electric interactions between two objects not in contact with one another (e.g., force on hair from an electrically charged balloon, electrical forces between a charged rod and pieces of paper) or magnetic interactions between two objects not in contact with one another (e.g., force between two permanent magnets or between an electromagnet and steel paperclips, force exerted by one magnet versus the force exerted by two magnets).</p> <p>4: Apply scientific ideas about magnets to solve a problem through an engineering design project (e.g., constructing a latch to keep a door shut, creating a device to keep two moving objects from touching each other such as a maglev system).*</p> |
| <p>Part of 2nd Quarter & All of 3rd Quarter (November 27 – March 16)</p> | <p style="text-align: center;">HEREDITY & DIVERSITY</p> <p>5: Obtain and combine information to describe that organisms are classified as living things, rather than nonliving things, based on their ability to obtain and use resources, grow, reproduce, and maintain stable internal conditions while living in a constantly changing external environment.</p> <p>6: Create representations to explain the unique and diverse life cycles of organisms other than humans (e.g., flowering plants, frogs, butterflies), including commonalities such as birth, growth, reproduction, and death.</p> <p>7: Examine data to provide evidence that plants and animals, excluding humans, have traits inherited from parents and that variations of these traits exist in groups of similar organisms (e.g., flower colors in pea plants, fur color and pattern in animal offspring).</p> <p>8: Engage in argument from evidence to justify that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient water, change in an arctic fox's fur color due to light and/or temperature, stunted growth of a normally large animal due to malnourishment).</p> <p>9: Analyze and interpret data from fossils (e.g., type, size, distribution) to provide evidence of organisms and the environments in which they lived long ago (e.g., marine fossils on dry land, tropical plant fossils in arctic areas, fossils of extinct organisms in any environment).</p> <p>10: Investigate how variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (e.g.,</p> |

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| | <p>plants having larger thorns being less likely to be eaten by predators, animals having better camouflage coloration being more likely to survive and bear offspring).</p> <p>11: Construct an argument from evidence to explain the likelihood of an organism's ability to survive when compared to the resources in a certain habitat (e.g., freshwater organisms survive well, less well, or not at all in saltwater; desert organisms survive well, less well, or not at all in woodlands).</p> <ul style="list-style-type: none"> a. Construct explanations that forming groups helps some organisms survive. b. Create models that illustrate how organisms and their habitats make up a system in which the parts depend on each other. c. Categorize resources in various habitats as basic materials (e.g., sunlight, air, freshwater, soil), produced materials (e.g., food, fuel, shelter), or as nonmaterial (e.g., safety, instinct, nature-learned behaviors). <p>12: Evaluate engineered solutions to a problem created by environmental changes and any resulting impacts on the types and density of plant and animal populations living in the environment (e.g., replanting of sea oats in coastal areas due to destruction by hurricanes, creating property development restrictions in vacation areas to reduce displacement and loss of native animal populations).*</p> |
| <p>4th Quarter</p> | <p style="text-align: center;">WEATHER & CLIMATE</p> <p>13: Display data graphically and in tables to describe typical weather conditions expected during a particular season (e.g., average temperature, precipitation, wind direction).</p> <p>14: Collect information from a variety of sources to describe climates in different regions of the world.</p> <p>15: Evaluate a design solution (e.g., flood barriers, wind resistant roofs, lightning rods) that reduces the impact of a weather-related hazard.*</p> |